PPT Program Stakeholder Meeting
March 2-3, 2010

Breakout Session 1

Pushing the Limits: Designing the Next Generation of N95 Filtering Facepiece Respirators (FFRs)

Session Objectives

- **Review current filtering facepiece respirator (FFR) certification**
- **Discuss FFR attributes**
- **Discuss the questions from the NIOSH PPT Program concerning current FFR technology**

Filtering Facepiece Respirator Certification

- **431 filtering facepiece respirator approvals granted to 37 different companies**
  - This does not include the filtering facepiece approvals that have been rescinded or revoked.
  - Of these 431 approvals, 25 of them are obsolete.

- **Current FFR Certification testing**
  - Breathing resistance
  - Filter efficiency

Styles of Filtering Facepiece Respirators

Duck-bill
Kimberly-Clark

Flat-fold
3M 9211

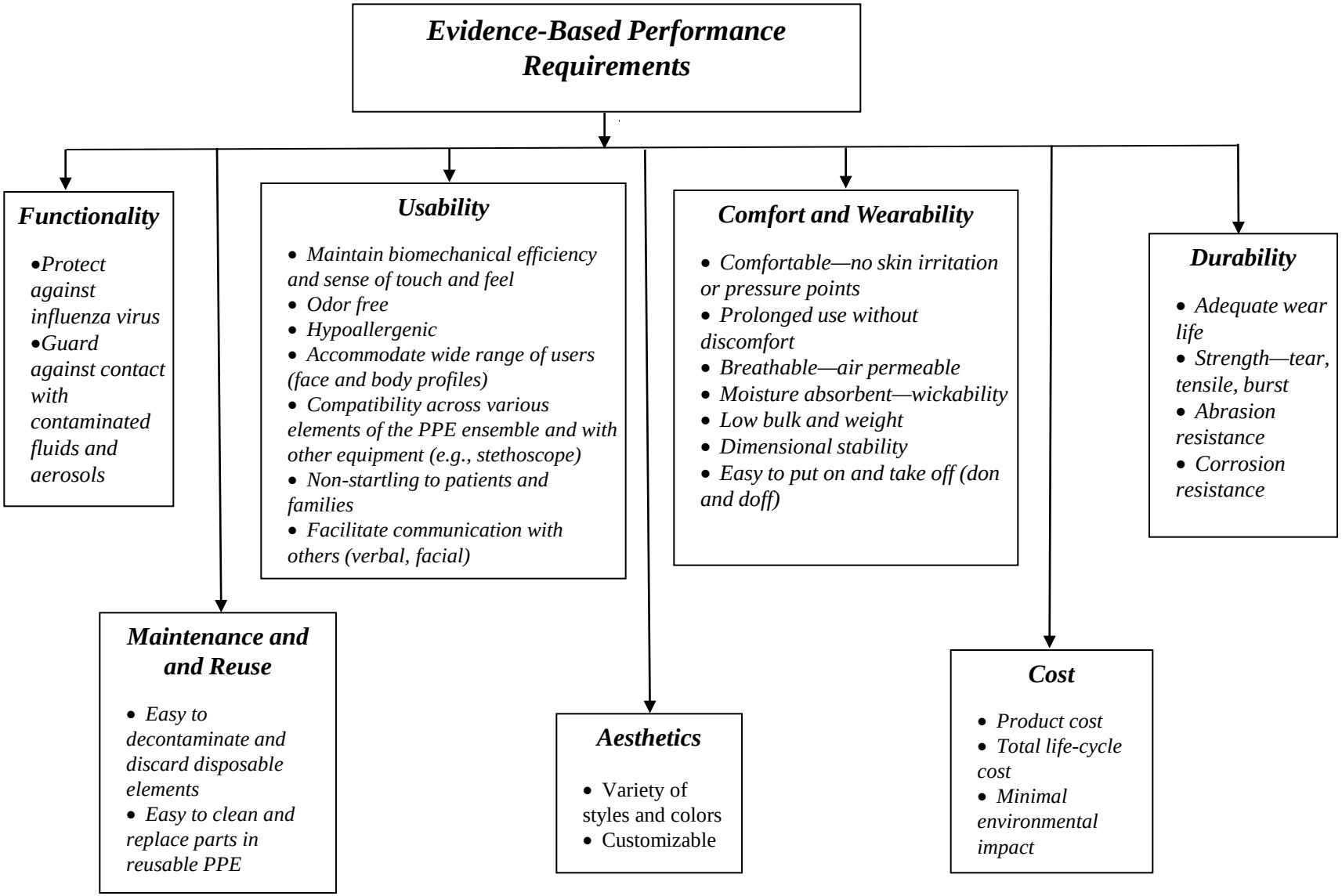
Flat-fold
MSA

Cup
Gerson 2747

Fan-fold
Alpha-Protech

Surgical N95
Moldex 3100

Surgical Mask
Kimberly-Clark



From the National Academies Press (IOM PPE for HCW Report (2008))

Breakout Session 1: Question 1

What are the differences among the various styles of FFRs relative to a) protection, b) comfort, c) usability, d) maintenance, e) reuse, f) durability, g) cost?

Respirator Attributes and Comparative Analysis						
Compare the different types of FFRs and masks with respect to the various attributes on a 1, 5, 10 scale						
A = Always(10), S = Sometimes (5), N = Never(0)						
Attribute	**Duck-Bill**	**Flat-fold**	**Fan-fold**	**Cup**	**Surgical N95**	**Surgical Mask**
Protection (Functionality)						
Filtration Efficiency						
Face Seal Leakage						
Fluid Resistance						
Comfort						
Breathability						
Tightness of Strap						
Weight						
Usability						
Range of Facial Profiles						
Impairment of Communication						
Sweating						
Maintenance and Reuse						
Ease of Decontamination						
Reusability						
Durability						
Length of Use (Hours/Days)						
Cost						
Unit Price						
Disposal Cost						
Aesthetics						
Colors						
Styles/Shape						

Breakout Session 1: Question 2

What are the principle gaps between state-of-the-art FFR devices and user needs and requirements?

Breakout Session 1: Question 3

Which of these gaps can be adequately addressed by administrative procedures and which require new designs?

Breakout Session 1: Question 4

Which of the gaps requiring new designs require what types of new technologies?

Breakout Session 1: Question 5

Are there very near things that can be done to effect almost immediate improvements as to FFRs?

Breakout Session 1: Question 6

What are the two/three most important things that NIOSH should do to support the development and use of advanced FFRs?

Thank You

- **Your participation and input are greatly appreciated**

- **Please browse the posters and talk with the researchers for additional information regarding ongoing research related to this session**